

REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

At the outset, it is respectfully noted that while the Official Action at page 1 (item 4) correctly indicates that claims 4, 5, 8, 9, 13, 14, 19 and 20 currently stand pending and withdrawn from consideration, the Official Action at page 2 incorrectly states that such claims have been canceled. Correction of the indication of the status of such claims is respectfully requested.

By the above amendments, claims 3-5 have been amended to correct a typographical error to correct the spelling of the word "retarder". Claims 3, 4, 7, 8, 12, 13, 18 and 19 have been amended to correct the spelling of the word "below". Claim 9 has been amended to correct the claim dependency thereof. Claims 6 and 15 have been amended for readability purposes by replacing the phrase "namely, in" with "which corresponds to".

In the Official Action, claims 1, 2 and 6 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent Application Publication No. 2003/0214625 (*Arakawa et al*) in view of Japanese Patent Document No. 2001-091741 (JP '741), and further in view of U.S. Patent No. 6,825,902 (*Kaneko*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claim 1 is directed to a retarder comprising: a substrate having a longitudinal direction, a first optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, in which the rod-like molecules are aligned homogeneously, and substantially generating a phase difference of Π at 550 nm, and a second optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline

compound, in which the rod-like molecules are aligned homogeneously, and substantially generating a phase difference of $\Pi/2$ at 550 nm; wherein an in-plane slow axis of the first optically anisotropic layer and the longitudinal direction of the substrate cross substantially at +30 degrees, an in-plane slow axis of the second optically anisotropic layer and the longitudinal direction of the substrate cross substantially at -30 degrees, and the in-plane slow axis of the second optically anisotropic layer and the in-plane slow axis of the first optically anisotropic layer cross substantially at 60 degrees.

Arakawa et al relates to a circularly polarizing plate comprising a linearly polarizing membrane and a quarter wave plate (page 1, paragraph [0001]).

Arakawa et al does not disclose or suggest each feature recited in claim 1. For example, *Arakawa et al* does not disclose or suggest a retarder comprising a first optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, and a second optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, as recited in claim 1. In this regard, the Patent Office has relied on *Arakawa et al*'s disclosure of a quarter wave plate shown in Figure 3 which comprises an optically anisotropic layer A and an optically anisotropic layer B (page 4, paragraph [0057]). However, *Arakawa et al* discloses that the optically anisotropic layer A is made from discotic liquid crystal molecules, and the optically anisotropic layer B is a polymer film which has been uniaxially stretched (page 4, paragraphs [0059] and [0060]). There is simply no disclosure or suggestion of a retarder comprising first and second optically anisotropic layers that are each formed of a composition comprising a rod-like liquid-crystalline compound, as recited in claim 1.

Furthermore, *Arakawa et al* fails to disclose or suggest that an in-plane slow axis of the first optically anisotropic layer and the longitudinal direction of the substrate cross

substantially at +30 degrees, an in-plane slow axis of the second optically anisotropic layer and the longitudinal direction of the substrate cross substantially at -30 degrees, and the in-plane slow axis of the second optically anisotropic layer and the in-plane slow axis of the first optically anisotropic layer cross substantially at 60 degrees, as recited in claim 1. This deficiency of *Arakawa et al* is acknowledged by the Patent Office at pages 3 and 4 of the Official Action.

JP '741 fails to cure the above-described deficiencies of *Arakawa et al*. In this regard, the Patent Office has relied on *JP '741* for disclosing a retarder comprising "a first optically anisotropic layer (A) having substantially Π phase difference at 550 nm wavelength and a second optically anisotropic layer (B) having substantially $\Pi/2$ phase difference at 550 nm wavelength for the benefit of obtaining an extremely thin wide band $\lambda/4$ plate" (Official Action at page 3). However, like *Arakawa et al*, *JP '741* does not disclose or suggest that an in-plane slow axis of the first optically anisotropic layer and the longitudinal direction of the substrate cross substantially at +30 degrees, an in-plane slow axis of the second optically anisotropic layer and the longitudinal direction of the substrate cross substantially at -30 degrees, and the in-plane slow axis of the second optically anisotropic layer and the in-plane slow axis of the first optically anisotropic layer cross substantially at 60 degrees, as recited in claim 1.

Kaneko also fails to cure the above-described deficiencies of *Arakawa et al*. In this regard, the Patent Office has relied on *Kaneko* at column 9, lines 15-20, for disclosing specific positions of first and second retardation films in relation to a horizontal axis H-H of a liquid crystal element (Official Action at page 4). However, it is noted that *Kaneko* discloses that the first and second retardation films are formed by drawing polycarbonate, that a third retardation film is also formed by drawing a polycarbonate, and that such first, second and

third retardation films can be used as quarter- or half- wavelength plates (col. 7, lines 58-65). In stark contrast, *Arakawa et al* discloses the disadvantages of using a structure of the type disclosed by *Kaneko*, and explains that it is difficult to adjust the directions of two polymer films, and even more difficult to adjust the direction of three polymer films (page 1, paragraph [0007]). As such, in light of the fact that *Arakawa et al* teaches away from the use of a structure of the type disclosed by *Kaneko*, it is apparent that one of ordinary skill in the art would not have been motivated to combine *Kaneko* with *Arakawa et al* in the manner suggested in the Official Action.

Moreover, assuming (incorrectly) that *Kaneko* could have been properly combined with *Arakawa et al*, *Kaneko* nevertheless fails to disclose or suggest that an in-plane slow axis of the first optically anisotropic layer and the longitudinal direction of the substrate cross substantially at +30 degrees, an in-plane slow axis of the second optically anisotropic layer and the longitudinal direction of the substrate cross substantially at -30 degrees, and the in-plane slow axis of the second optically anisotropic layer and the in-plane slow axis of the first optically anisotropic layer cross substantially at 60 degrees, as recited in claim 1. In this regard, *Kaneko* discloses the position of the phase delay axes of the first and second retardation films with respect to the horizontal axis H-H of the liquid crystal element. However, the Patent Office has not provided any reason why, let alone shown with the requisite certainty that, the "horizontal axis H-H" disclosed by *Kaneko* corresponds to the claimed longitudinal direction of the substrate.

For at least the above reasons, claim 1 is not obvious over the alleged combination of *Arakawa et al*, JP '741 and *Kaneko*.

Independent claim 6 is directed to a process for preparing a retarder. For the same reasons discussed above with respect to claim 1, the applied art fails to disclose or suggest the

claimed relationships between the rubbing axis of the first alignment layer, the longitudinal direction of the substrate, and the rubbing axis of the second alignment layer, as recited in claim 6. Moreover, one of ordinary skill in the art would not have been motivated to combine *Arakawa et al* and *Kaneko* in the manner suggested in the Official Action, in light of *Arakawa et al*'s teaching away of employing a structure of the type disclosed by *Kaneko*.

For at least the above reasons, withdrawal of the above §103(a) rejection is respectfully requested.

Claims 10, 11 and 15-17 stand rejected under 35 U.S.C. §103(a) as being obvious over *Kaneko* in view of *JP '741*, and further in view of *Arakawa et al*. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claim 10 is directed to a circular polarizer comprising: a linear polarizer film having a transparent axis substantially inclined at +45 degrees or -45 degrees relative to a longitudinal direction thereof, a substrate having a longitudinal direction, a first optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, in which the rod-like molecules are aligned homogeneously, and substantially generating a phase difference of Π at 550 nm, and a second optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, in which the rod-like molecules are aligned homogeneously, and substantially generating a phase difference of $\Pi/2$ at 550 nm; wherein an in-plane slow axis of the first optically anisotropic layer and the longitudinal direction of the substrate cross substantially at +30 degrees, an in-plane slow axis of the second optically anisotropic layer and the longitudinal direction of the substrate cross substantially at -30 degrees, and the in-plane slow axis of the second optically anisotropic layer and the in-plane slow axis of the first optically anisotropic layer cross substantially at 60 degrees.

Kaneko does not disclose or suggest each feature recited in claim 10. For example, as acknowledged by the Patent Office, *Kaneko* does not disclose or suggest a circular polarizer comprising a first optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, and a second optically anisotropic layer formed of a composition comprising a rod-like liquid-crystalline compound, as recited in claim 10 (Official Action at page 6).

Furthermore, for the same reasons discussed above with respect to claim 1, *Kaneko* fails to disclose or suggest the claimed relationships between the in-plane slow axis of the first optically anisotropic layer, the longitudinal direction of the substrate, and the in-plane slow axis of the second optically anisotropic layer, as recited in claim 10. In this regard, the Patent Office has not provided any reason why, let alone shown with the requisite certainty that, the "horizontal axis H-H" of the liquid crystal element disclosed by *Kaneko*, corresponds to the claimed longitudinal direction of the substrate.

Furthermore, *Kaneko* is not properly combinable with *JP '741* and *Arakawa et al* in the manner suggested in the Official Action. As discussed above, *Arakawa et al* discloses disadvantages in connection with the use of a multiple polymer film structure of the type disclosed by *Kaneko*. Referring to U.S. Patent No. 6,519,016 (*Ichihashi et al*), which claims the benefit of foreign priority to the Japanese application corresponding to *JP '741*, *Ichihashi et al* discloses that a problem with using polycarbonate films to form a phase retarder is that the resulting structure is relatively thick, i.e., 120 μm or more (col. 1, lines 38-55).¹ Thus, in light of the fact that *Arakawa et al* and *Ichihashi et al* teach away from the use of a structure of the type disclosed by *JP '741*, one of ordinary skill in the art would not have been motivated to combine *JP '741* with either such documents.

¹ *Ichihashi et al* has been cited in the Information Disclosure Statement filed herewith.

For at least the above reasons, claim 10 is not obvious over the alleged combination of *Kaneko, JP '741* and *Arakawa et al.*

Independent claim 15 is directed to a process for preparing a circular polarizer. For the same reasons discussed above with respect to claim 10, the applied art fails to disclose or suggest the claimed relationships between the rubbing axis of the first alignment layer, the longitudinal direction of the substrate, and the rubbing axis of the second alignment layer, as recited in claim 15. In fact, *Kaneko* also fails to disclose or suggest rubbing a surface of a layer in a direction at +30 degrees relative to the longitudinal direction of the substrate, to prepare a first alignment layer capable of aligning rod-like liquid-crystalline molecules in a direction parallel to a rubbing axis. In addition, *Kaneko* fails to disclose or suggest rubbing a surface of a layer in a direction at -30 degrees relative to the longitudinal direction of the substrate, which corresponds to a direction crossing the rubbing axis of the first alignment layer at 60 degrees, to prepare a second alignment layer capable of aligning rod-like liquid-crystalline molecules in a direction parallel to a rubbing axis, or rubbing a surface of a layer in a direction at +30 degrees relative to the longitudinal direction of the substrate, which corresponds to a direction crossing the rubbing axis of the first alignment layer at 60 degrees, to prepare a second alignment layer capable of aligning rod-like liquid-crystalline molecules in a direction parallel to a rubbing axis, as recited in claim 15.

Moreover, one of ordinary skill in the art would not have been motivated to combine *Arakawa et al* and *Kaneko* in the manner suggested in the Official Action, in light of *Arakawa et al's* teaching away from employing a structure formed from multiple polymer films of the type disclosed by *Kaneko*, as discussed above.

For at least the above reasons, withdrawal of the above §103(a) rejection is respectfully requested.

Claims 3, 7, 12 and 18 stand rejected under 35 U.S.C. §103(a) as being obvious over *Arakawa et al* in view of *JP '741* and *Kaneko*, and further in view of U.S. Patent No. 6,338,902 (*Hsu et al*). Claims 3, 7, 12 and 18 depend from independent claims 1, 6, 10 and 15, respectively. It is submitted that claims 3, 7, 12 and 18 are allowable over the applied art for at least the reasons discussed above with respect to the independent claims from which they depend. Accordingly, withdrawal of the above rejection is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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